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HOUSEKEEPERS' CHAT

Wednesday, May 27, 1936

(FOR BROADCAST USE ONLY)

Subject: "CANNING TO SAVE FRESHNESS." Information from the Bureau of Home Economics, United States Department of Agriculture.

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Listeners, get ready to heave a sigh of relief. Here is news that promises better looking and tasting canned green vegetables in the future. The researchers, experimenting in their laboratories for ways to assure better canned food, have made another discovery. And this discovery promises to help the housewife who will be putting up her own garden vegetables this summer, and the housewife who will be buying canned vegetables, and all the families far and wide who will be eating them. Here is the report of the discovery, as sent to us from the Bureau of Home Economics.

"Of course, you know that maintaining color has long been a serious canning problem, especially maintaining the green color of vegetables right out of the garden. Green has been a problem because it is so elusive -- because the heat of canning has faded or changed it so that the vegetable, when canned, has never looked as attractive as the fresh vegetable. Bright fresh spring greens have come out of the can a duller green. Garden peas and green beans have faded; and so on with the other green vegetables. Worse still, along with this loss of color has gone some loss of flavor and fresh texture. No wonder many a family that has doted on fresh green vegetables has not had the same appetite for those out of a can.

"Long ago the researchers discovered the cause of this loss of green color. They found that chlorophyll, the green substance in plants, is sensitive to acid applied during heating. (You can observe this fact for yourself by dropping vinegar into a kettle of spinach during cooking and watching the leaves turn brown.) But you don't have to add acid to get this effect, for most vegetables contain acid which the heat of cooking drives out. And this acid can affect the chlorophyll unless it can pass off in the steam. If the vegetable is cooking in a kettle with no lid, the steam carries the volatile acid off into the air. In a closed kettle or sealed can, the acid remains and attacks the green color.

"This is the reason for the rule about cooking green vegetables, which you have often heard mentioned: 'To save color, cook the vegetable the shortest possible time in an open kettle.'

"This rule works very well for cooking vegetables, but not for canning them. In canning, closed or sealed containers and more heat are necessary to sterilize and prevent spoilage. So until lately, we have all just had to resign ourselves to the sad fact that green vegetables, canned, simply cannot be as attractive as green vegetables, freshly cooked.



"But the researchers have been tackling this color problem and from what I hear they seem to have it pretty well licked. At least, they have discovered a very simple way to hold much more of the green than ever before. The secret is in the precooking of the vegetable. They have found that if they precook any green vegetable at a low temperature -- that is, just below simmering -- the color seems to 'set' or hold; it will not fade or change later even when it is exposed to the high heat of processing. Heretofore, canning directions have advised precooking at the boiling temperature. Now, for the sake of color and freshness generally, precooking at a temperature of about 170 degrees Fahrenheit seems better.

"The canning people at the Bureau of Home Economics have tried this low-temperature precooking on spinach, kale, collards and mustard green as well as on green peas and green beans. In every trial, the color of the food canned by this method was better than the color of the food canned by the old method of precooking at the boiling point. Also, the flavor and texture of these vegetables precooked at 170 degrees seemed much more like fresh cooked vegetables. The home economists report good results from precooking spinach and other greens until they wilted and then packing them immediately into cans or jars. As for green beans, these they precooked until they would bend without breaking. Young tender garden peas took just 5 minutes of this low-temperature precooking.

"By the way, when we speak about precooking, of course, we refer to the so-called 'hot-pack' method of canning. The canning people generally agree nowadays that for most vegetables the hot pack is safest and gives the best results. (The old 'cold pack' and 'open-kettle' methods are no longer on the approved list.) For the hot pack you give the vegetables a short cooking in a saucepan with water, and then pack them hot into hot containers. The precooking accomplishes 3 things: it drives the air out of the vegetables; it wilts or shrinks the vegetables so that they will pack well; and it gives a high temperature at the start of the processing which is necessary for a good vacuum in the container. You can get these 3 results and also freshness in appearance and taste from precooking at simmering temperature. But with this lower temperature you have to precook for a longer time, and you have to be extra careful about packing the vegetables hot."

Well, listeners, that concludes our report on this idea of low-temperature precooking. It is a very simple discovery, to be sure. If you are planning to put up early beans or spinach or new young peas, it should help you get a more attractive and satisfactory product. If you buy canned vegetables, you may be interested to know that some of the commercial canning companies are also using this method to hold the green color and fresh flavor in vegetables.

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